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09/489,250	01/21/2000	Roger W. Phillips	13676.152	5610

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EXAMINER

CHANG, AUDREY Y

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/489,250

Applicant(s)

PHILLIPS ET AL.

Examiner

Audrey Y. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5, 9-26, 49-53, 65-69, 71-77, 79, 80, 84 and 85 is/are pending in the application.
- 4a) Of the above claim(s) 9-13, 15-26, 49-53, 65, 69, 71-75 and 78 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 14, 66-68, 76, 77, 79, 80, 84 and 85 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Remark*

- This Office Action is in response to applicant's amendment filed on May 23, 2003, which has been entered as paper number 25.
- By this amendment, the applicant has amended claims 1, 5, 66, 79 and 84, has canceled claims 7, 81-83 and has newly added claim 85.
- Claims 1-5, 14, 66-68, 76-77, 79-80 and 84-85 remain pending in this application. Claims 9-13, 15-46, 49-53, 65, 69, 71-75 and 78 are withdrawn from further consideration for they are drawn to non-elected invention group/species pursuant to 37 CFR 1.142(b).
- Rejections to claim 5 under 35 USC 112, first paragraph, set forth in the previous Office Action dated February 19, 2003 is withdrawn.

### *Claim Objections*

1. **Claim 85 is objected to** because of the following informalities: the phrase "the individual picture elements" recited in claim 85 is indefinite since it lacks proper antecedent basis from its based claim. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 1-5, 14, 79 and 84-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Uyama et al (PN. 5,700,550) in view of the patent issued to Berning et al (PN. 4,930,866).

Uyama et al teaches a transparent hologram seal that is comprised of a *base member* (2), serves as the light transmissive *substrate*, a *hologram forming layer* (4) having *hologram* formed within on a surface of the base member and a *transparent evaporated layer* (10), serves as the *color shifting optical coating*, such that the color of visible light changed according to the viewing angle when it is *transmitted* or *reflected* therefrom, (please see Figures 1-2, columns 5-6). Uyama et al teaches that by choosing desired material the base member and the hologram forming layer may be combined into a *single layer*, (please see column 5, lines 59-61). It is known in the art that a hologram essentially contains an interference pattern, which serves as the optical structure. Uyama et al further teaches that the hologram seal comprises an *adhesive layer* (16) on the evaporated layer, (please see Figure 9A).

This reference has met all the limitations of the claims with the exception that it does not teach explicitly that the transparent evaporated layer is formed at an opposite surface of the base member. However since the specification fails to teach having this particular arrangement would overcome any problem in the prior art and since by having the layer at one side or the other of the base member will not change the color-shifting function to the hologram seal such modification is therefore considered to be obvious matter of design choices to one skilled in the art. Furthermore, Uyama et al teaches that the base member and the hologram forming layer may be combined into a single layer this suggests the transparent evaporated layer, the color shifting coating, may be formed on the surface of the base member, wherein this surface may be identified as the *second* surface. From this teaching, it further shows that the function of the hologram does not change with respect to the position of the hologram is formed.

**Claims 1 and 79 have been amended to include the feature that the color shifting optical coating comprises an absorber layer on the substrate, a dielectric layer on the absorber layer and a**

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reflector layer on the dielectric layer. Uyama et al teaches that the color shifting evaporated layer (10) comprises a *multilayer interference film structure* with dielectric layers, (please see Figure 1), but it does not teach explicitly that it contains an absorber layer and a reflector layer with the order of the layers as claimed. **Berning** et al in the same field of endeavor teaches a color shifting multilayer interference coating (14, Figure 1) that is comprised of a chromium layer (16, Figure 1), which is a known absorber layer forming on a hardcoat substrate, a dielectric layer (17) on the absorber and an aluminum layer (18) which is a reflector layer. It would then have been obvious to one skilled in the art to apply the teachings of Berning et al to modify the transparent evaporated layer of Uyama et al accordingly for the benefit of providing a hologram seal with color shifting layer with desired of color shifting properties in reflection mode.

With regard to claims 2-3, Uyama et al teaches that the base member may be a *polyester* film, which is *plastic* material. Although this reference does not teach explicitly that the base member may also be made of other plastic materials as claimed, however since these materials are all well known plastic materials in the art for making transparent substrate to replace the polyester film by other plastic materials for making the base member would have been obvious to one skilled in the art. For it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended used as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

With regard to claims 5 and 79, Uyama et al teaches the hologram forming layer may include a hologram of a general type but it does not teach explicitly that it is the types claimed. However composite holograms that have different viewing images as viewing angle changed or pixilated holograms that generate a composite holographic image are all very well known designs in the art, (such is known as color hologram, multiplexed hologram etc.). Such modification would have been obvious matter of design choice to one skilled in the art for the benefit of adding different varieties of hologram image to the hologram seal.

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With regard to claim 84, this reference does not teach explicitly that the optical structure may also be of “moiré pattern”. However moiré pattern is a well known optical element in the art to provide optical visual property, to combine it with a color shifting interference filter to add color shifting effect to it is considered to be obvious modification to one skilled in the art for the benefits of providing color shifting corner moiré pattern.

With regard to claim 85, the cited references do not teach explicitly about the optical structure is a two-dimensional computer generated image with diffraction microstructures. However computer generated hologram is very well known in the art such modification would have been obvious to one skilled in the art for the particular design of the hologram does not change the operation of the hologram seal and such modification is also considered to be obvious matters of design choice to one skilled in the art for the benefit of allowing different hologram images be recorded.

**4. Claim 80 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Uyama et al in view of the patent issued to Berning et al (PN. 4,930,866).**

Uyama et al teaches a *transparent hologram seal having color shifting transparent evaporated layer* for providing color shifting taught with details described for **claim 1** has met all the limitations of the claims. Uyama et al teaches that the color shifting evaporated layer (10) comprises a multilayer interference film structure with dielectric layers, (please see Figure 1), but it does not teach explicitly that it contains an absorber layer. Berning et al in the same field of endeavor teaches a color shifting multilayer interference coating that is comprised of a chromium layer (16, Figure 1) which is a known absorber layer, a magnesium fluoride layer (17) which is known dielectric layer and a aluminum layer (18) which is a known reflector layer, (please see Figure 1, column 4). It would then have been obvious to one skilled in the art to apply the teachings of Berning et al to modify the transparent evaporated layer

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of Uyama et al accordingly for the benefit of providing a color shifting layer with a desired of color shifting properties.

**5. Claims 66-68, and 76-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent Berning et al (PN. 4,930,866) in view of the patent issued to Uyama et al (PN. 5,700,550).**

Berning et al teaches a *thin film optically variable article* having *color shifting property* in accordance with the change of the viewing angle wherein the article has a *structure* that is capable of being transferred to an object via *hot die stamp transfer process*. The hot die stamp structure comprises a *carrier film* (21), a *release layer* (24), a substantially transparent *substrate layer* (13), an *interference coating* (14) that serves as the *color shifting optical coating* and an *adhesive* (26), (please see Figure 1 and columns 3-4). The interference coating has color shifting property when viewed with different viewing angles.

This reference has met all the limitations of the claims with the exception that it does not teach explicitly that the substrate element has an *interference pattern* formed upon it. Uyama et al in the same field of endeavor teaches a transparent hologram seal that has color shifting property when viewed with different angle wherein the substrate has a *hologram-forming layer* for forming a hologram upon one of the surface, (please see Figure 1). It would have been obvious to one skilled in the art to apply the teachings of Uyama et al to modify the thin film optically variable article to include a hologram within the substrate for the benefit of adding hologram image to the article for adding more authentic feature to the article.

**Claim 66 has been amended to include the feature that the interference coating has an absorber layer formed on the substrate, a dielectric layer formed on the absorber layer and a reflector layer on the dielectric layer.** Berning et al teaches explicitly that the interference coating (14, Figure) includes a

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chromium layer (16), which is a known absorber layer, a dielectric layer (17) on the absorber layer and an aluminum layer (18), which is a known reflector layer.

With regard to claims 67 and 68, Berning et al teaches that the carrier film is made of polymer film such as PET, which is one type of plastic material and the release layer is made of waxes, (please see column 3, lines 54-57 and lines 69).

With regard to claim 70, Berning et al teaches that the color-shifting interference coating comprises a *chromium layer* (16) which is a known *absorber* in the art, a *magnesium fluoride layer* (17) which is a known *dielectric layer* and an *aluminum layer* (18) which is a known *reflector layer*, (please see Figure 1 and column 4).

With regard to claims 76 and 77, Berning et al teaches that the adhesive may be *thermally* activated, (please see column 6, line 8). Uyama et al teaches the adhesive may be *acrylic* series adhesive agent, (please column 6, lines 48-54). Although these references do not teach explicitly that the adhesive may also be UV activated adhesive however since this type of adhesive agent is quite well known in the art such modification would have been obvious matter of design choice to one skilled in the art since there is not criticality of using the type of adhesive over the prior art agent.

### ***Response to Arguments***

6. Applicant's arguments filed on May 23, 2003 have been fully considered but they are not persuasive. The newly amended claims have been fully considered and they are rejected for the reasons stated above.

7. In response to applicant's arguments, which state the cited Uyama et al reference ONLY teaches that the hologram be formed on the bottom of layer 4, therefore differs from the instant application, the examiner respectfully disagrees for the reasons stated below. The examiner wishes to remind the applicant respectfully that the *reproduction property or the viewing property* of a hologram is purely



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based on the *interference fringes formed or recorded in the hologram medium*. It has nothing to do with the material quality of the recording medium. The applicant is respectfully noted that the “*reflectivity*” property concerning the hologram is *not in the claims*. It is known in the art that a reflection type hologram is formed by having the *recording reference beam* and *object beam* directed at *opposite* direction with respect to each other as they enter the recording medium, it is not based on the material quality of the recording medium. In response to applicant’s arguments and suggested conditions, the applicant is respectfully noted that the hologram will function *exactly the same* as it is formed on the top or bottom surface of the layer since the reconstruction of the hologram (i.e. viewing the hologram) is *totally dependent* on the condition of the replay reference beam incidents on the hologram. When the reference beam is incident at the original recording orientation, the interference between the incident reference beams diffracted the hologram will be constructive and the observer is capable of seeing the hologram. If the reference beam orientation is off no hologram will be viewed. This reconstruction property has *nothing* to do with the material property of the hologram-recording medium and has nothing to do if the hologram is formed on the top or bottom surface. Furthermore, the hologram of Uyama et al formed in the hologram forming layer either be incorporated with the base layer or not functions exactly the same as the hologram in the instant application.

8. In response to applicant’s argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The cited reference Uyama et al reference teaches explicitly that an interference coating having color shifting property is combined a hologram layer to provide color

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shifting property for the hologram seal. The cited reference Berning et al teaches an interference coating that has color shifting property. The possibility of combining a color shifting interference coating with a hologram has already been established by the teachings of Uyama et al. Although the Berning et al reference does not teach explicitly that the interference coating is used with a hologram however such combination and application is not prevented physically and can be achieved as suggested by the teachings of Uyama et al.

### ***Double Patenting***

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**Claims 1-5, 14, 66-68, 76-77, 79-80 and 84-85 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 9-13, 19-22, 53-57 of copending Application No. 09/351,102.** Although the conflicting claims are not identical, they are not patentably distinct from each other because they both claim a security article comprising a light transmissive substrate, having a diffraction grating pattern (which is an optical structure), and a color shifting layer having an absorber layer, dielectric layer and a reflector with the claimed order. The color shifting optical coating presenting different color as viewing angle changes and the optical structure or diffraction grating provides an optical feature.

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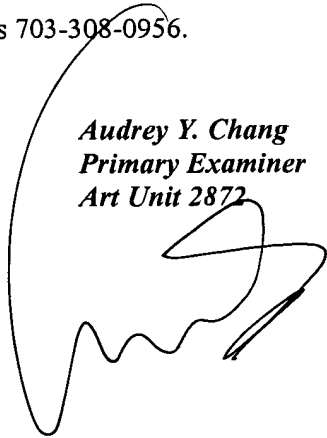
This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 703-305-6208. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 703-305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

*Audrey Y. Chang*  
*Primary Examiner*  
*Art Unit 2872*



A. Chang, Ph.D.